

REMARKS

Claims 1, 4 and 7 have been amended, claim 27 has been cancelled without prejudice, and claims 28-30 have been added herein. No new matter has been introduced.

Applicant gratefully acknowledges the allowance of claims 16-26, and the Examiner's indication of the allowability of claims 4-11 and 15 if placed in independent form. Applicant has rewritten claims 4 and 7 in independent form as new claims 28 and 29, and respectfully requests allowance of these claims.

Claims 1 and 12 have been rejected under 35 U.S.C. 102(b) as being anticipated by Gillis (U.S. 6,439,321). Applicant will discuss these two independent claims in turn.

While it is not conceded that originally filed claim 1 is anticipated by Gillis, to expedite prosecution Applicant has amended claim 1 to recite that the clutch assembly is operable to disengage upper and lower portions of the drill string while drilling. Assuming, *arguendo*, that the clutch assembly in Gillis is operable to disengage upper and lower portions of the drill string, which is not conceded, the clutch is constructed to be engaged throughout drilling. As discussed at col. 14, lines 41-57 and at col. 18, lines 7-25, as soon as drilling begins the piston 78 (annular sleeve 82) travels longitudinally (from the position shown in Fig. 2 to that shown in Fig. 3). This causes the lower end 90 (Fig. 5) of the piston 78 to act on the upper end 178 of the shuttle cam assembly 176 (Figs. 5 and 9), moving the shuttle cam assembly longitudinally and engaging the clutch teeth 208, 220. As explained at col. 18, lines 22-25, as long as drilling proceeds the clutch remains engaged, preventing or inhibiting rotation of the shaft 98. Thus, Gillis' clutch is not operable to disengage drill string portions during drilling as recited in amended claim 1.

Claim 12 recites, in pertinent part, a ratchet assembly operable to rotationally disengage upper and lower portions of a drill string. While Gillis does disclose a ratchet assembly 224 (col. 18, line 38 – col. 19, line 25 and left hand side of Fig. 7), the ratchet assembly does not engage and disengage portions of a drill string. Instead, Gillis explicitly states that the ratchet teeth are *engaged at all times* (col. 19, lines 1-3). The ratchet teeth need to remain engaged at all times because the ratchet mechanism in the Gillis system does not engage or disengage two parts, but instead prevents counter-clockwise rotation of shaft 98 during drilling and re-setting of the

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shuttle cam assembly. (See, e.g., col. 18, lines 38-42 and col. 19, lines 12-25.) Accordingly, Gillis does not disclose a ratchet assembly that is operable to rotationally disengage, as claimed.

In view of the above, Applicant respectfully requests that the rejection of claims 1 and 12 be withdrawn.

Claim 27 has been rejected under 35 U.S.C. 102(b) as being anticipated by Simpson (U.S. 5,649,603). While Applicant does not concede that this rejection is proper, this rejection has been obviated by the cancellation of claim 27.

Claims 2, 3, 13 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Gillis '321.¹ These claims are patentable for at least the reason that they depend from a patentable base claim, as discussed above.

New claim 30 is patentable for at least the reason that Gillis' clutch mechanism is engaged by fluid flow, rather than disengaged, as explained above.

Enclosed is a Enter \$ amount check for excess claim fees. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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¹ While the office action says "Simpson '321," it seems clear from context that "Simpson" is a typographical error and that Gillis was intended.